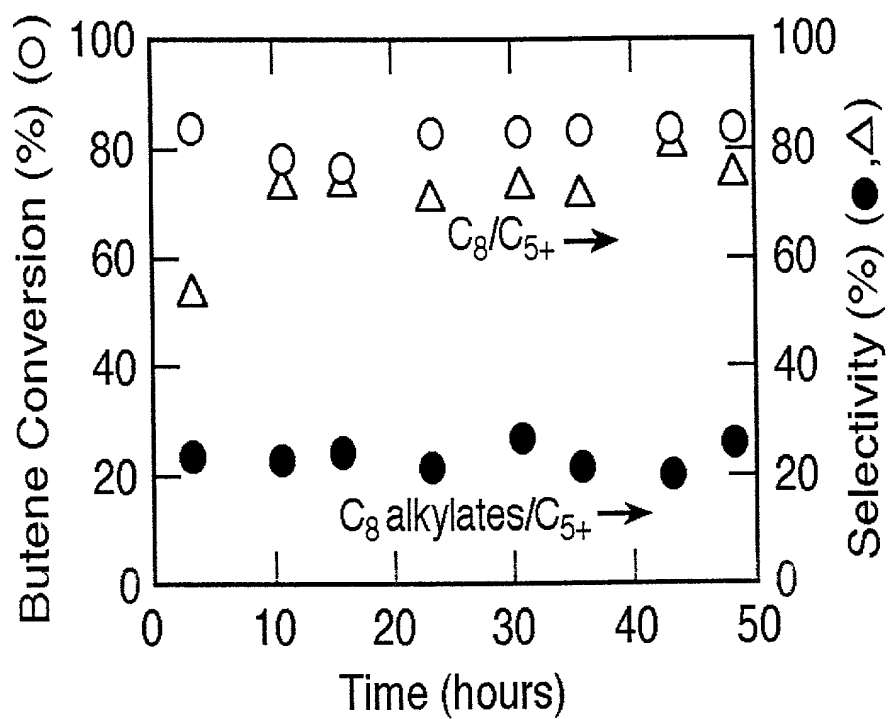
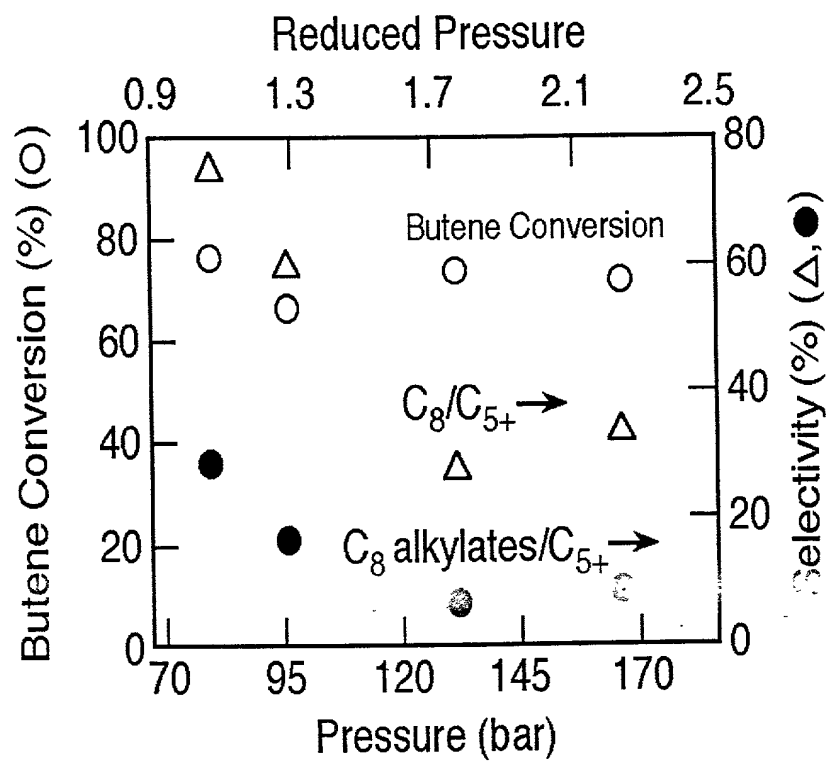


**Figure 1**



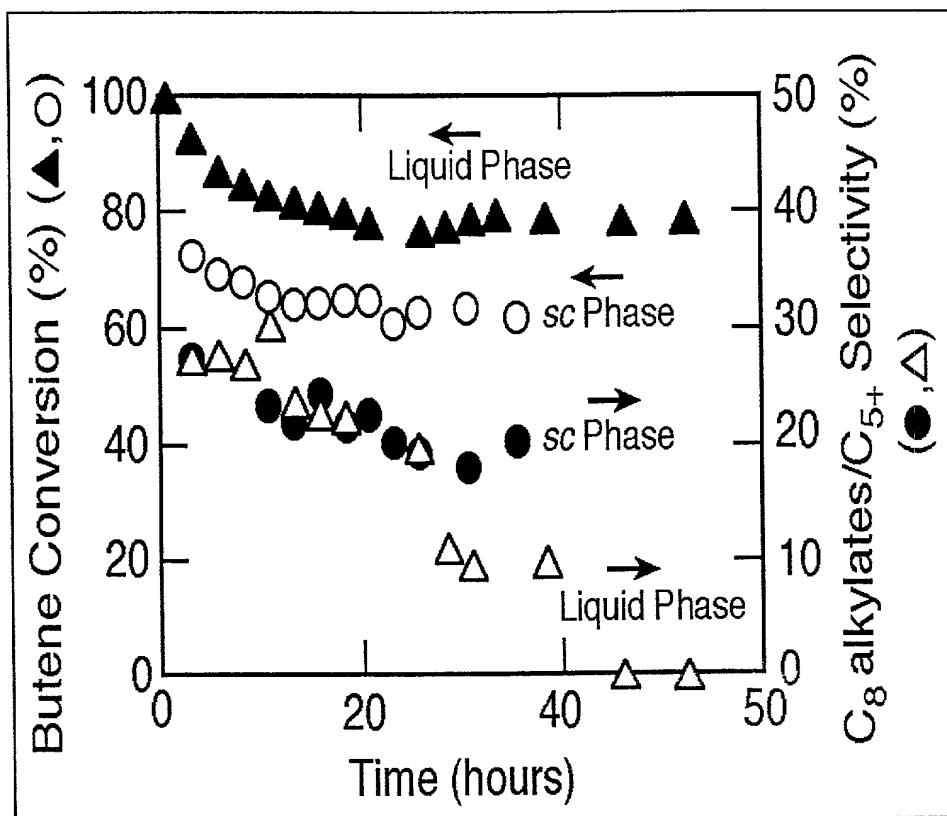
Steady alkylation activity on SAC-13 catalyst. 80 bar, 368 K, 0.05 h<sup>-1</sup> OSV, I/O=5, CO<sub>2</sub>= 70 mole %.

Figure 2



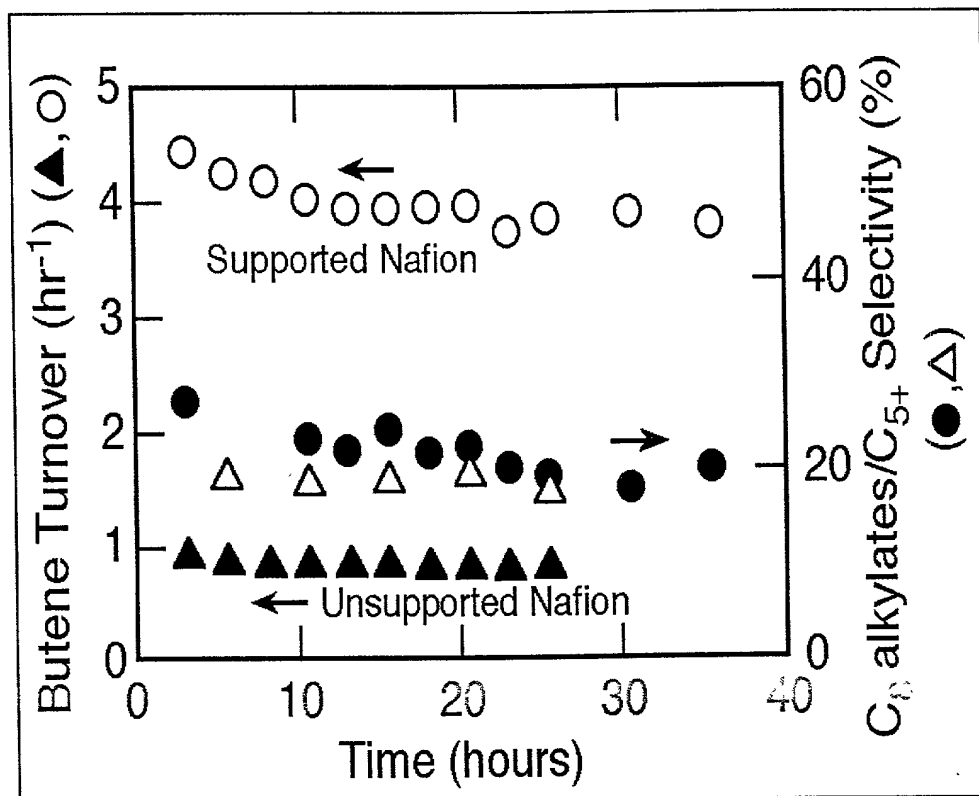
Pressure tuning effect on alkylation activity. 368 K, I/O=5, 0.05 h<sup>-1</sup>

**Figure 3**



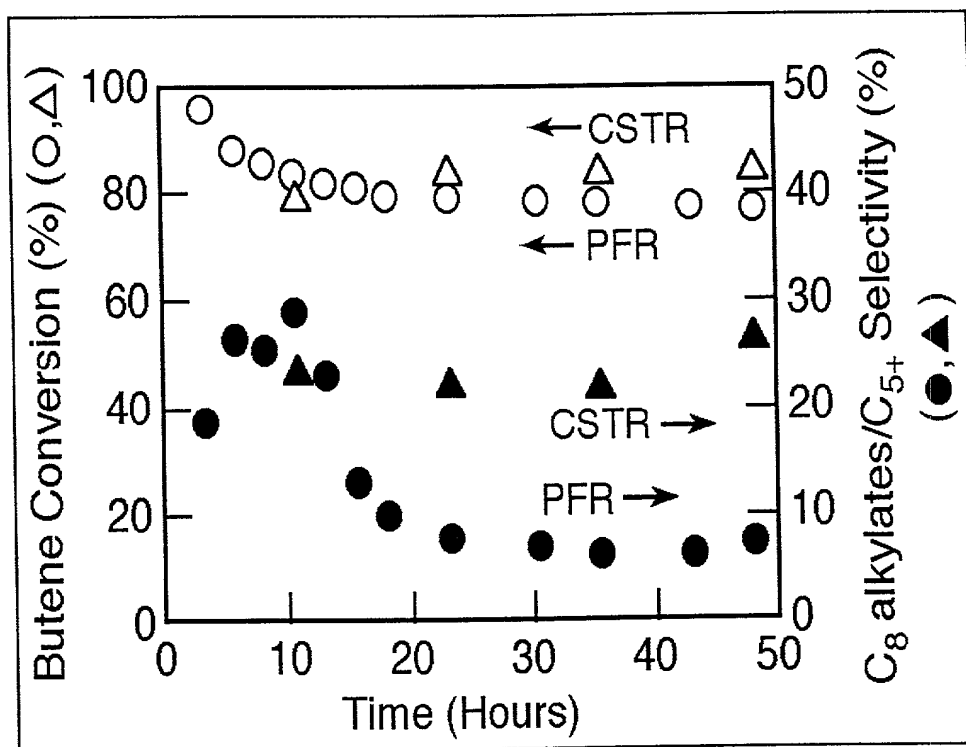
Liquid (26 bar) vs. supercritical phase alkylation (95 bar, 70 mole% CO<sub>2</sub>) on SAC-13. 368 K, 0.05 h<sup>-1</sup> OSV, I/O=10.

**Figure 4**



Supported (SAC-13) vs. unsupported Nafion® catalysts. 80 bar, 368 K, 0.05 h<sup>-1</sup> OSV, I/O=5, 70 mole% CO<sub>2</sub>.

**Figure 5**



Effect of reactor configuration. 97 bar, 368 K, 0.05 h<sup>-1</sup> OSV, I/O=10

Figure 6

Isobutane/1-butene alkylation in sc-CO<sub>2</sub> at 368 K over SiO<sub>2</sub>-supported  
Nafion<sup>®</sup> with periodic regeneration by CO<sub>2</sub> at 155 bar.

Butene conversion (■), C<sub>8</sub> selectivity (◇), and C<sub>12</sub><sup>+</sup> selectivity (●)

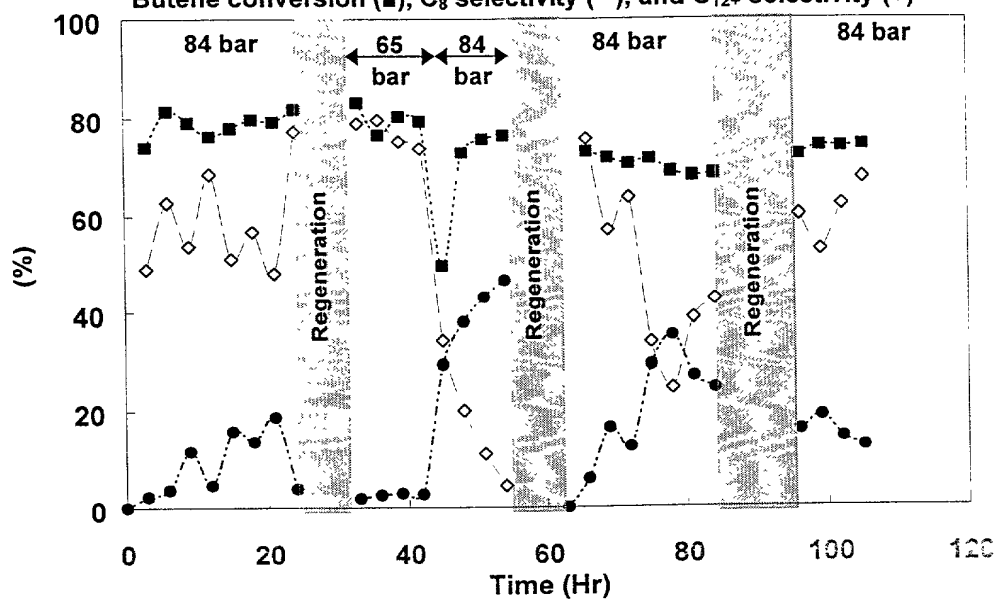


Figure 7

Isobutane/1-butene alkylation in sc-CO<sub>2</sub> at 368 K  
over SiO<sub>2</sub>-supported Nafion<sup>®</sup> at 78 bar.  
Butene conversion (■), C<sub>8</sub> selectivity (◇), and C<sub>12+</sub> selectivity (●)

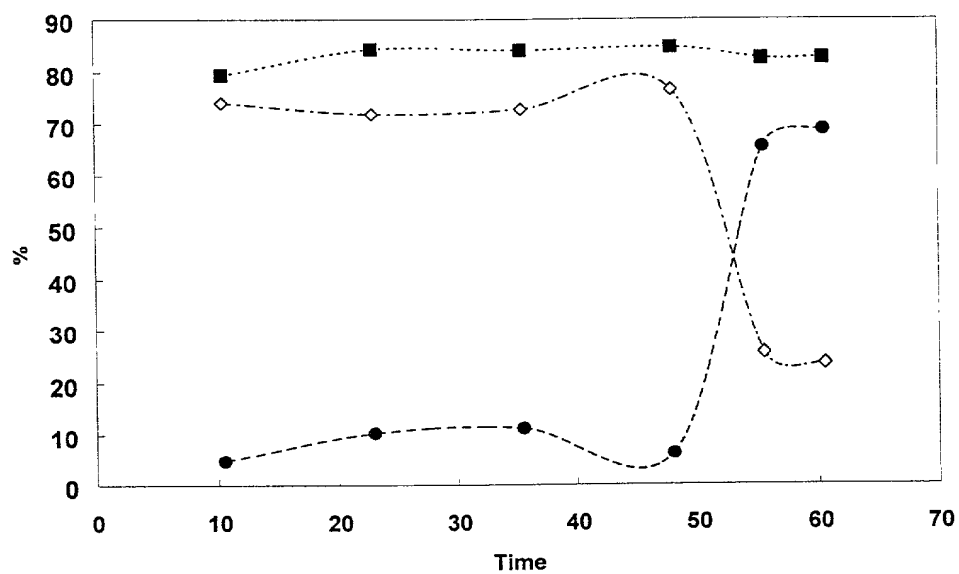


Figure 8



Isobutane/1-butene alkylation in sc-CO<sub>2</sub> at 368 K over SiO<sub>2</sub>-supported Nafion<sup>®</sup>.  
Butene conversion (■), C<sub>8</sub> selectivity (◇), and C<sub>12+</sub> selectivity (●)

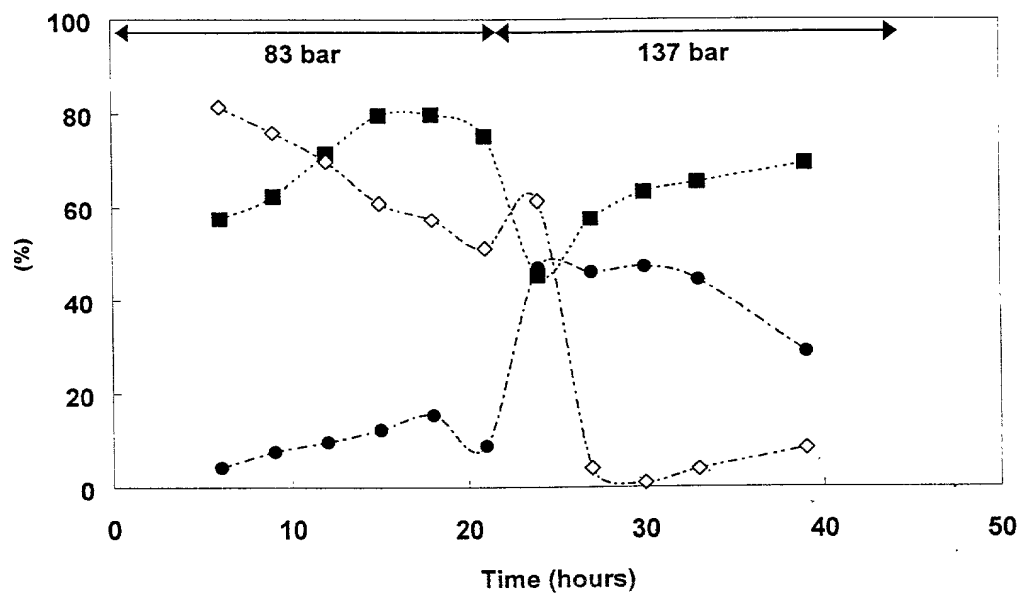


Figure 9

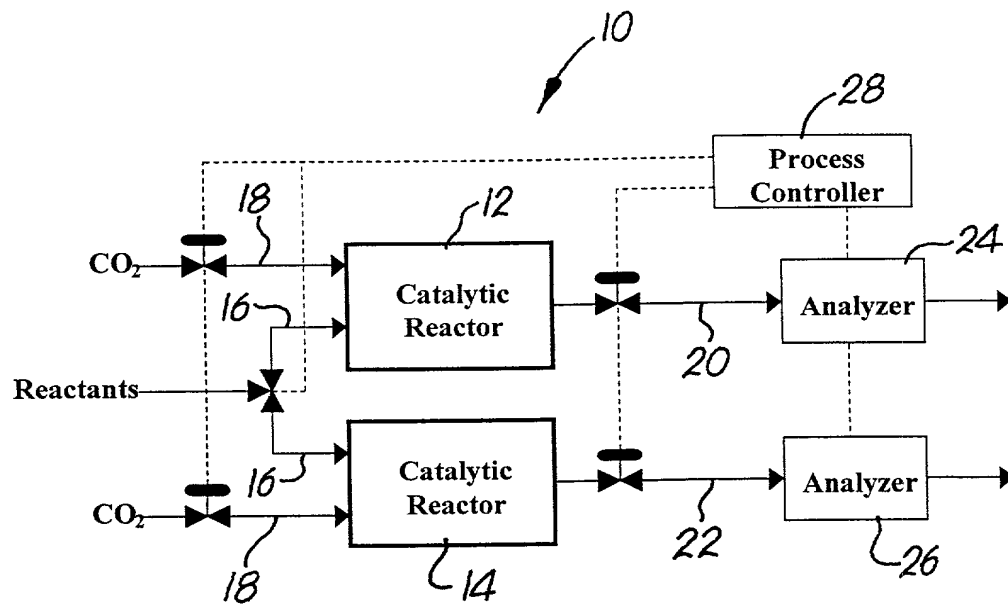


Figure 10

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